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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,254	02/20/2004	Jack Bech Nielsen	10168.204-US	1411

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NOVOZYMES NORTH AMERICA, INC.
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NEW YORK, NY 10110

EXAMINER

TRAN LIEN, THUY

ART UNIT	PAPER NUMBER
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1761

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/783,254

Applicant(s)

NIELSEN ET AL.

Examiner

Lien T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maselli et al in view of Kilibwa.

Maselli et al disclose a process of form breakfast cereals. The process comprises the steps of mixing alpha-amylase with cereal grain fraction, cooking the cereal grain, tempering the grains, draining the grains and forming the grains into breakfast cereal shapes. The amount of water ranges from about 20-55%. The tempering period is up to about 48 hours, typically from 2-24 hours. The grains may be formed by shredding, flaking, grinding, extrusion and the like. The enzymatic treatment may begin prior to cooking. The cooking is done to gelatinize the starch. The cereal grain fraction contain from about 25-45% cereal starch. In the production of extruded products, the grains are optionally dried and extruded. Various dies may be used to extrude into cereal shaped pieces. The enzymes are inactivated by heating during conventional baking, toasting and drying steps. (see col. 11 lines 19-50, col. 12 lines 26-30, col. 17 lines 14-35, col. 13 lines 11-25.)

Maselli et al disclose all the steps of the above cited claims. The cooking step is the same as the claimed heating so as to gelatinize the starch. Since the cereal grains are treated with enzyme degrading enzyme and it is subjected to a holding period within the time frame claimed, it is inherent retrogradation of the starch takes place.

Maselli et al do not disclose forming pellets, frying the pellets in oil, puffing in hot air, the use of maltogenic alpha amylase or pullulanase and the cooling temperature.

Kilibwa teaches that enzymes such as Bacterial amylases, other maltogenic amylases, pullulanase work on the starch fraction; they create low molecular weight sugars and dextrans (see col. 2 lines 7-12, col. 4 lines 30-35)

Maselli et al teach forming the grains into various breakfast cereal shapes. It would have been obvious to form the cereal into pellets if such shape is desired. This would have been an obvious matter of choice. Maselli et al disclose the shaped pieces may be puffed. Puffing by frying and hot air are well known in the art. It would have been obvious to one skilled in the art to use any known puffing method to puff the formed pieces. Maselli et al teach to add alpha-amylase to convert the starch to dextrans. As shown by Kilibwa, other enzymes such as maltogenic alpha amylase and pullulanase also act on starch to generate dextrans. This shows that all the enzymes (alpha amylase, maltogenic alpha amylase and pullulanase) have equivalent function. Thus, it would have been obvious to one skilled in the art to use another enzyme which has the same function as required by Maselli et al. It would have been within the skill of one in the art to determine the appropriate cooling temperature.

In the response filed 10/18/06, applicant requests clarification of the rejection statement concerning the Kilibwa reference. The rejection of claims 1-23 is over Maselli et al in view of Kilibwa. The omission of the Kilibwa reference in the rejection statement is an oversight.

In the response filed 10/18/06, applicant argues alpha-amylases, maltogenic alpha amylases and pullalanases are different enzymes which produce different end products by different enzymatic mechanisms. Whether this statement is true or not

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does not take away the obviousness of substituting maltogenic alpha amylase for alpha amylase in the Maselli et al process. Maselli et al disclose the alpha amylase is used to convert the starch to dextrins. Kilibwa shows that maltogenic alpha amylase work on the starch fraction to generate dextrins. The enzymes can generate different products; but it has the common function of generating dextrins from starch and this is the function that Maselli et al use alpha amylase for. Thus, knowing that different enzymes can also generate dextrin from starch, it would have been obvious to one skilled in the art to substitute different enzyme to obtain the same function. The claims do not recite any specific product from the use of maltogenic alpha amylase. While applicant argues all the three enzymes are not equivalent, the disclosure does not support such argument because it discloses the use of all three enzymes. Page 5 discloses all the enzyme-treated products look nicer; the enzymes include maltogenic alpha amylase, and alpha amylase. Applicant questions how the ability to form dextrins results in the ability to accelerate starch retrogradation. The claims do not have any limitation on acceleration of starch regrogradation relating to the use of the enzyme. The claims recite cooling and holding the gelatinized starch composition to effect retrogradation of the starch and Maselli et al disclose such steps. The obviousness of substituting maltogenic alpha amylase for the alpha amylase in Maselli et al is the ability to form dextrin and Kilibwa shows that maltogenic apha amylase performs such function.

Applicant's arguments filed 10/18/06 have been fully considered but they are not persuasive.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lien T. Tran whose telephone number is 571-272-1408. The examiner can normally be reached on Monday, Wed-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cano Milton can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 3, 2007


LIEN TRAN
PRIMARY EXAMINER
